

Mortuary management and public health

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Abstract

Mortuary is the place where autopsy of human beings where death due to unnatural circumstances is conducted. An attempt has been made by the investigators to conduct a study related to the standards of present mortuaries and to address the requirement for future challenges. A total of 16 autopsy centres were selected for the study during the period 2018-2019. This study is based on the available information provided from different mortuaries. Three teaching hospitals, five area hospitals and eight rural hospitals were selected. Post-mortem examination in Telangana state are done in designated hospitals run by the Government only. Teaching hospital mortuaries are provided with relatively good facilities like sanitation, permanent water supply, waste disposal and incineration plants as compared to area hospitals and rural hospitals. Menace of rodents is seen in all mortuaries present in teaching hospitals, area hospitals and rural hospitals. Addiction to alcohol is frequently seen among mortuary workers and even among the doctors. Number of post-mortem examinations in teaching hospitals is higher compared to area and rural hospitals. There are several areas in mortuaries, which are prone to producing infections and foul smells. As the bodies start decomposing, the foul smell increases and hence bacteria are also abundant in these areas. Extensive biological waste is produced. Maggots and other insects, all add to the poor conditions within mortuaries. All together the atmosphere in and around mortuary is poor and renovation of mortuaries is the need of the day.

Keywords

Mortuary; Autopsies; Public Health; Sanitation; Environment.

Introduction

The word mortuary is derived from mortem – death; the place where dead are examined. Earlier the equivalent word used was Morgue, which means a place where the dead bodies are stored. The mortuary is a place of mystery, sadness, grief or repulsion, and, to add to it often a poorly managed place. As a doctor, we expect some standards to be followed to run a mortuary.

Death of a human being, under unnatural circumstances invites the attention of the law. Subsequently, a medico-legal autopsy is done on that dead body to answer the questions posed by the Investigating officer. This requires a place to conduct the required autopsy. An Ideal Mortuary – Does it exist? The answer is always 'no' in the present scenario. However, something resembling an ideal mortuary can be prepared, even with the given resources. When we talk about an ideal mortuary, it starts from its location, structure, functions and the auxiliary services it provides to the society. The ideal location of any mortuary will be within the premises of the hospital, so that if any death occurs in the hospital, the body can be shifted there immediately. It is a functional unit which requires certain

infrastructure, in terms of the erected structure and the equipment. The building requires some important rooms within it viz., dissection room, room for preservation of tissue and viscera, laboratory, room for receiving and disposal of dead bodies, body storing area, doctor's office with its ante-room, toilet facility for the doctors and mortuary staff, shelter for the relatives of the deceased with attached toilet, inquest room, and an additional room for other officials who visit the mortuary.

All mortuaries may not have the same amount of workload. Hence it may not be possible for the Government to provide all facilities to all mortuaries where the medico-legal autopsies are conducted. In some states, the medico-legal autopsies are conducted even in private hospitals where there is permission for such procedures. The managements of those hospitals also may not provide all the requirements of so called ideal mortuary. The techniques of conducting the medico-legal autopsies are changing by time with the advancement in Science and Technology and also in the quality of crime. Keeping in view the above facts, the facilities which are present today may not be sufficient to cater tomorrow's requirement.

That day is not far away, when an autopsy on a dead body will be completed without dissection, with answers to all questions. This is called a "Virtopsy".^{1,2} When such virtual autopsies are encouraged, the scene of mortuary will be entirely changed.³⁻⁵ But are the present mortuaries equipped to evolve accordingly? The present study was conducted to answer the above question.

A detailed study is needed on the available facilities in the existing mortuaries in the state in different setups, their capacity

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to meet the demands, their incapacities and lacunae, their ability to adopt any advancements in that setup. However, this study is based on the available information provided from different mortuaries of the present day and thus it may be lacking some important information in regard to the policy matters of the Government.

Material and Methods

The study of public health in relation to the mortuary needs a continuous observation and monitoring of the functioning of the mortuary.^{6,7} Health related problems will be seen in people working in the area of mortuary, which includes doctors, paramedical staff, workers of the mortuary, scavengers, relatives of the deceased, officials, public workers, public representatives, etc.

Apart from the above, there are many fauna which thrive on biological waste, which includes rodents, roaches, frogs, ants, flies and beetles, etc.

These health hazards⁸⁻¹⁰ are seen not only directly on men in the vicinity of the contaminated environment of the mortuary, but will also be carried by the other living organisms.

The Inclusion criteria for the study was all types of mortuaries near to Hyderabad, opinions expressed by the doctors working in the hospital and opinions of the persons who came to attend to these mortuaries. The exclusion criteria was mortuaries under renovation, mortuaries started one year back and opinions of persons who are not well versed with the mortuary proceedings.

All the data collected was analysed by using the Excel sheet and observations laid down. However, an attempt for comparing with other mortuaries is made.

Results

The present study is based on the information provided by the different autopsy centres of hospitals. Three teaching hospitals, five area hospitals and eight rural hospitals were selected for the present study. The teaching hospitals studied are Osmania Medical College, Hyderabad, Gandhi Medical College, Secunderabad, Kakatiya Medical College, Warangal, of Telangana state. The area hospitals studied are of Pargi, Vikarabad, Sangareddy, Jacherla and Nalgonda of Telangana state. Rural hospitals studied are Ibrahimpatnam, Sadashivpet, Zaheerabad, Kohir, Tandur, Medchal, Gajwel and Ramannapeta of Telangana state. The identity of the hospitals is not revealed in the present study as it was requested by the heads of those centres. (Figure 1)

Except for two rural hospitals, rest hospitals have an identified area to conduct autopsies. All teaching hospitals have a permanent structure for conducting autopsies. In one area hospital there is no permanent structure for mortuary and it is

run in GI tin-shed, whereas five of eight rural hospitals have a permanent structure for mortuary and for the rest, it is done under temporary arrangements. The average number of post-mortem examinations in teaching hospitals varies from 7.1 to 13.6 to 14.2 per day. Whereas in area hospital it is ranging from 0.6 to 1.2 per day. In rural hospital, 0.1 to 0.4 post-mortem examinations are conducted per day.^{11,12}

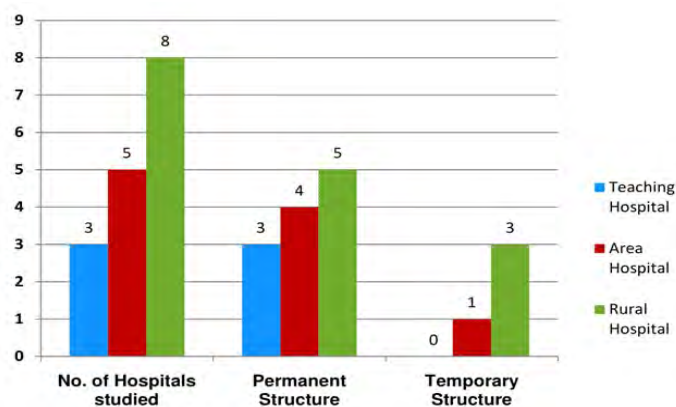


Figure 1: Number of hospitals studied and structure of mortuary

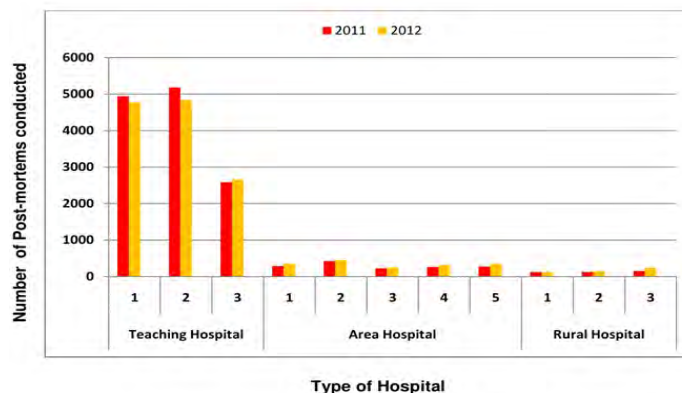


Figure 2: Number of post-mortem examinations conducted during 2011 and 2012 in hospitals

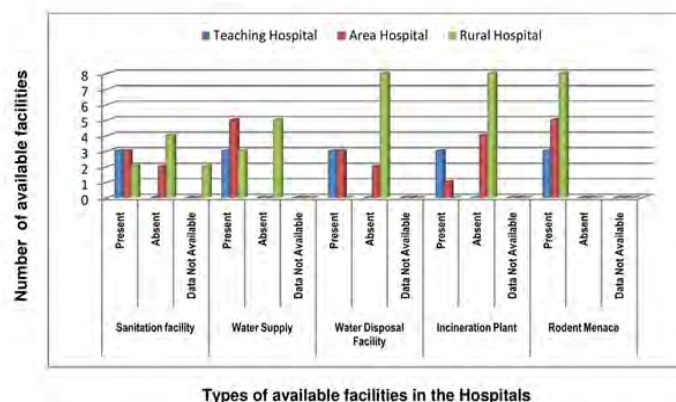


Figure 3: Availability of facilities in hospitals during 2011 and 2012

Information regarding the total number of doctors working in teaching hospitals was not made available. In area hospitals, about 17 to 25 doctors are working. In rural hospitals, the number of doctors is varying from 2 to 6.

Doctors qualified in Forensic Medicine (M.D. in Forensic Medicine) are working only in teaching hospitals and some area hospitals and no qualified doctors in rural hospitals in the surrounding areas of Osmania Medical College. Workload on the mortuaries of teaching hospitals appears to be decreasing as some centres in the periphery areas have been identified by the Government for conducting autopsies.

The average number of post-mortem examinations conducted by each doctor in teaching hospitals varies from 320, 400 and 520. In area hospitals, 12 to 20 autopsies^{13,14} are conducted in a year in average by each doctor. In rural hospitals, the total number of autopsies conducted in a year are around 20 to 50 by each doctor. (Figure 2)

Sanitation facility is present in all teaching hospitals. In 40% area hospitals, sanitation is available. In rural hospitals, it is seen only in 25% (2 of 8) of them. Permanent water supply facility is seen in all teaching hospitals. It is also seen in all area hospitals. But only in 27.5% (3 of 8) rural hospitals permanent water supply is established. (Figure 3)

Waste disposal is done according to the existing guidelines given by the Bio-medical waste management and handling norms in all teaching hospitals. It is observed in 60% (3 of 5) of area hospitals. Waste is not properly disposed in all rural hospitals. Incineration plant is established in all teaching hospitals and they are properly working to reduce pollution. In only one Area hospital, there is a functioning incineration plant present. No rural hospital has an incineration plant. Menace of Rodents is seen in all mortuaries present in teaching hospitals, area hospitals and rural hospitals. Sufficient data is lacking regarding the outbreak of infectious diseases.

Addiction to alcohol is frequently seen among the mortuary workers and even among the doctors. So far, 9 persons in teaching hospitals, 10 persons in area hospitals and 6 persons working in rural hospitals have been found to be chronic alcoholics. In teaching hospitals, 3 persons committed suicide and 1 person attempted to commit suicide. One person committed suicide in one of the rural hospitals. Data regarding the suicides was not available from the area hospital.

Familial disharmony is one of the social problems quite frequently seen among the workers of the mortuary. It is also seen in doctors who regularly visit the mortuary. On records, not many cases are found but, 6 persons from teaching hospitals^{16,17} had familial problems and 2 were facing marital problems. Only one doctor from the area hospital had familial problems. Opinion of the visitors and attendants of the

deceased are not available as their stay in the mortuary area was short and many of them were reluctant to give such opinions.

Discussion

The present study was undertaken on the basis of information provided by the autopsy centre in hospitals, and identifies the common social and environmental problems which are of public health and importance. Hospitals present nearby Hyderabad were selected for the study. Kakatiya Medical College, Warangal; Gandhi Medical College, Secunderabad were also considered as they are the major centres conducting autopsies at their end.

Almost all centres have an identified area as 'Mortuary.' Many of them having a permanent structure, where water facility is available. But in some rural hospitals, autopsies are still done under temporary arrangements. Hospitals having all facilities are far away from the police stations and the political leaders put pressure on the medical staff to conduct autopsies in centres devoid of all facilities. Number of post-mortem examinations conducted is increasing with time. But in two teaching hospitals the number came down in the last year because other centres started taking the autopsy work nearby.

Osmania Medical College, Hyderabad, Gandhi Medical College, Secunderabad, and Kakatiya Medical College, Warangal, have several peripheral hospitals but the exact strength of the employed doctors is not available. However, qualified Forensic Medicine experts are available only in teaching hospitals and some area hospitals, and none in rural hospitals.

On an average, 300 to 500 post-mortem examinations are performed by a qualified Forensic expert in a teaching hospital. And in area hospital, the number of autopsies is between 12 and 20. This may be because less number of autopsies are conducted per year and more number of doctors are available even though they are not specialized. In rural hospital, the workload has increased a little from 20 to 50. This is once again because of less number of doctors available.

Sanitation is a major problem in rural and area hospitals because adequate staff will not be present and the employed staff has to look after other areas of the hospital and the workers invest very little time and effort towards mortuaries. Water supply is given at least to all mortuaries. However, in some rural hospitals, the water is made available by buckets.

Waste disposal many times invites public notice. It is more so when the mortuary is situated nearby a habitation. It is poorly managed in rural hospitals, as there may not be enough protest from the civilians. Incineration plant is a costly equipment, and its maintenance is even costlier. Hence, it may not be available

to many institutions. Fortunately, all teaching hospitals have the facility to burn biological waste.

Rodent menace is high in mortuary area due to the accumulation of biological waste. Fortunately, infections are uncommon in the existing mortuaries. It may not be due to the appropriate precautions being taken but due to the immunity levels of the people employed there.

As the mortuary is not an ideal area to be working in for most individuals, they often resort to alcoholism to escape from the foul smelling gases, unclean environment and from having to deal with death on a daily basis. Familial disharmony is rampant among the workers of the mortuary. Suicides are not frequently seen among the mortuary staff but there are some instances where persons commit suicides. Many of them are due to their personal and social reasons and may not be related to the working atmosphere.

Conclusion

Post-mortem examinations in Telangana state are done in designated hospitals run by Government only. There are different set-ups in hospitals to conduct post-mortem examinations. Many hospitals have a permanent structure for mortuary. The structure of the mortuary is not uniform in all hospitals. Teaching hospitals are provided with relatively good facilities in mortuaries. Mortuaries in area hospitals are good enough to conduct regular post-mortem examination work. In mofussil hospitals, permanent structures are not available to conduct post-mortem examinations. Many times, they are conducted under tin-sheds. No civilian is willing to enter the mortuary, unless their beloved are dead. Mortuary is a disagreeable place for many but is need of the present society. It needs to be improved¹⁸ with respect to providing facilities required to conduct smooth medico-legal work. Many social problems are generated by the improperly maintained mortuaries and health hazards are not uncommon for the people exposed to the environment of mortuary. Lack of proper disposal facilities in some mortuaries is limiting their working capacity and thus renovation of mortuaries is the need of the day.

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